Paper No. 19

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Ex parte J. B. DRUMMOND and MUKESH J. AMIN

Appeal No. 2002-1278
Application No. 09/216,768

ON BRIEF

Before COHEN, NASE, and BAHR, Administrative Patent Judges.

NASE, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claims 1 to 20, which are all of the claims pending in this application.

BACKGROUND

The appellants' invention relates to sensor systems employed for determining actuation of safety restraints in a vehicle and more particularly for sensor systems that detect possible rollover conditions of a vehicle (specification, p. 1). A copy of the claims under appeal is set forth in the appendix to the appellants' brief.

The prior art applied by the examiner in rejecting the appealed claims is:

Rider	4,443,729	Apr. 17, 1984
Macy	5,522,249	June 5, 1996
Otsuka	6,104,284	Aug. 15, 2000
Hermann et al. (Hermann)	6,113,138	Sept. 5, 2000

In addition, the examiner also relied upon the appellants' admission of prior art (specification, page 1, line 13 to page 2, line 23) relating to conventional passive restraint systems. (Admitted Prior Art).

Claims 1 to 4, 6, 12 to 15 and 17 to 20 stand rejected under 35 U.S.C. § 103 as being unpatentable over Otsuka in view of the Admitted Prior Art and Hermann.

Claims 5, 7 to 11 and 16 stand rejected under 35 U.S.C. § 103 as being

Rather than reiterate the conflicting viewpoints advanced by the examiner and the appellants regarding the above-noted rejections, we make reference to the final rejection (Paper No. 12, mailed May 23, 2001) and the answer (Paper No. 16, mailed January 29, 2002) for the examiner's complete reasoning in support of the rejections, and to the brief (Paper No. 15, filed January 4, 2002) and reply brief (Paper No. 17, filed March 14, 2002) for the appellants' arguments thereagainst.

OPINION

In reaching our decision in this appeal, we have given careful consideration to the appellants' specification and claims, to the applied prior art, and to the respective positions articulated by the appellants and the examiner. Upon evaluation of all the evidence before us, it is our conclusion that the evidence adduced by the examiner is insufficient to establish a prima facie case of obviousness with respect to the claims under appeal. Accordingly, we will not sustain the examiner's rejection of claims 1 to 20 under 35 U.S.C. § 103. Our reasoning for this determination follows.

In rejecting claims under 35 U.S.C. § 103, the examiner bears the initial burden

combine the relevant teachings of the references to arrive at the claimed invention. See In re Fine, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988) and In re Lintner, 458 F.2d 1013, 1016, 173 USPQ 560, 562 (CCPA 1972).

The Admitted Prior Art teaches that conventional passive restraint systems include (1) a longitudinal impact sensor located near the center of the vehicle; (2) a restraints control module in communication with the longitudinal impact sensor; (3) a first satellite sensor housing typically mounted in or near one side door and spaced from the restraints control module; (4) a lateral impact sensor mounted in the first satellite sensor housing and in communication with the restraints control module via a first communication link; (5) a second satellite sensor housing typically mounted in or near an opposite side door and spaced from the restraints control module, (6) a second lateral impact sensor mounted in the second satellite sensor housing and in communication with the restraints control module via a second communication link; and (7) a roll rate sensor mounted in a third satellite sensor housing and in communication with the restraints control module via a third communication link.

to roll over on the basis of the degree to which the vehicle rolls. As is shown in Figure 3, the vehicle is equipped with a head-protecting air bag device 10. The air bag device 10 is provided with a side impact sensor 12 for detecting a side impact, an inflator 14 for operating to eject gas, an air bag body 16 for protecting a head portion folded in a predetermined fashion, and a control circuit 17 for controlling the operation of the inflator 14. In addition, the control system includes a roll rate sensor 13 for detecting the roll which is the motion of the vehicle in a sideways direction, a sideways acceleration sensor 15 for detecting the sideways acceleration acting on the vehicle and a steering angle sensor 19 for detecting the steering angle. The roll rate sensor 13, the sideways acceleration sensor 15 and the steering angle sensor 19 are connected to the control circuit 17.

Hermann's invention relates to a control device in a motor vehicle for detecting an impact and for detecting a rotational movement that includes a transversal acceleration pick-up in each half of the vehicle, as defined by the longitudinal axis of the vehicle, and a longitudinal acceleration pick-up. An evaluation device evaluates longitudinal acceleration and transversal acceleration variables and derives a rotational

Figure 1 is a diagrammatic, plan view of a symbolic vehicle with a first configuration according to Hermann. The longitudinal axis A-A' of the vehicle divides the vehicle into a left-hand side half LH and a right-hand side half RH. A control unit 41, which is disposed centrally in the vehicle, has a longitudinal acceleration pick-up 2 in the form of an acceleration sensor with a sensitivity axis that is aligned parallel to the longitudinal axis A-A' of the vehicle. In addition, the central control unit 41 contains an evaluation device 3 which is connected in an electrically conductive manner to transversal acceleration pick-ups 11 and 12 which are disposed in the halves LH and RH of the vehicle in a decentralized manner. Each transversal acceleration pick-up 11 and 12 is constructed as a transversal acceleration sensor 111 and 121 with a sensitivity axis parallel to the transversal axis B-B' of the vehicle. The transversal acceleration sensor 111 which is disposed on the left-hand side supplies a left-hand side transversal acceleration y1 to the evaluation device 3, and the right-hand side transversal acceleration sensor 121 supplies a right-hand side transversal acceleration y2.

Figure 2 is a diagrammatic, plan view of a symbolic vehicle with a second

21 and 22 which are disposed in a decentralized manner. The longitudinal acceleration sensor and the transversal acceleration sensor of the same vehicle half together form one control unit. A left-hand side control unit 42 supplies a left-hand side longitudinal acceleration x1 as well as a left-hand side transversal acceleration y1 to the evaluation device 3. A right-hand side control unit 43 supplies a right-hand side longitudinal acceleration x2 and a right-hand side transversal acceleration y2 to the evaluation device 3. Hermann teaches (column 3, lines 49-67) that the

> decentralized control unit contains the component which is disposed in a sealed enclosure, for example in a sealed housing or a cast casing, so that the acceleration sensors are protected against environmental influences such as dampness or corrosion. The decentralized control units can be manufactured with little use of material in a few production steps. The decentralized control units are at a significant distance from the central region of the vehicle so that acceleration sensors on the left-hand side and acceleration sensors on the right-hand side supply distinguishable signals due to their different spatial positioning. The decentralized control units are preferably disposed on a vehicle seat, in such a way that the left-hand side control unit is disposed at the driver's seat and the right-hand side control unit at the front passenger's seat. Alternatively, the decentralized control units are disposed at side components of the vehicle, with the left-hand side control unit on the driver's door and the right-hand side control unit on the front passenger's door.

Hermann further teaches (column 4, lines 49-59) that

> [i]f the decentralized control units have longitudinal acceleration sensors, any longitudinal or transversal acceleration sensor which is disposed in a

After the scope and content of the prior art are determined, the differences between the prior art and the claims at issue are to be ascertained. Graham v. John Deere Co., 383 U.S. 1, 17-18, 148 USPQ 459, 467 (1966).

In the rejections before us in this appeal, the examiner did not ascertain the differences between Otsuka and the independent claims on appeal (i.e., claims 1, 8 and 12). Instead, the examiner noted (final rejection, p. 2) that neither Otsuka nor the Admitted Prior Art disclose "mounting both the lateral impact sensor and the roll rate sensor within one first satellite sensor housing in communication with the restraints control module via a first control link." Based on our analysis and review of the Admitted Prior Art and claim 1, it is our opinion that the only differences are (1) the roll rate sensor being mounted in the satellite sensor housing in which the lateral impact sensor is mounted and (2) the roll rate sensor being in communication with the restraints control module via the first communication link which communicates the lateral impact sensor with the restraints control module.[1] Considering Otsuka and claim 1, it is our opinion that the only differences are (1) a longitudinal impact sensor located generally adjacent the longitudinally directed vehicle centerline; (2) a restraints control

mounted; and (4) the roll rate sensor being in communication with the restraints control module via the first communication link which communicates the lateral impact sensor with the restraints control module.[2]

The examiner determined (final rejection, pp. 2-3) that it would have been obvious to a person of ordinary skill in the art to "encase the sensors disclosed in Otsuka in a housing" in view of the teachings of Hermann.[3] The examiner further stated that "merely housing the lateral impact sensor and the roll rate sensor within one first satellite sensor housing would be an obvious engineering choice for one of ordinary skill in this art."

The appellants argue that the applied prior art does not teach or suggest the claimed combination of a roll rate sensor and a lateral impact sensor mounted in the same housing which share the same communication link to a restraint control module. We agree. In that regard, while Hermann does teach having both a longitudinal impact sensor and a lateral impact sensor mounted in the same housing which share the same communication link to a restraint control module, Hermann does not teach or suggest

share the same communication link to a restraint control module. To supply this omission in the teachings of the applied prior art, the examiner made the above-noted determination that the differences would have been an obvious engineering choice for one of ordinary skill in this art. However, this determination has not been supported by any evidence that would have led an artisan to arrive at the claimed invention.[4]

In our view, the only suggestion for modifying either Otsuka or the Admitted Prior Art to arrive at the claimed invention stems from hindsight knowledge derived from the appellants' own disclosure, not the teachings of the applied prior art. The use of such hindsight knowledge to support an obviousness rejection under 35 U.S.C. § 103 is, of course, impermissible. See, for example, W. L. Gore and Assocs., Inc. v. Garlock, Inc., 721 F.2d 1540, 1553, 220 USPQ 303, 312-13 (Fed. Cir. 1983), cert. denied, 469 U.S.

[4] Evidence of a suggestion, teaching, or motivation to modify a reference may flow from the prior art references themselves, the knowledge of one of ordinary skill in the art, or, in some cases, from the

851 (1984). It follows that we cannot sustain the examiner's rejections of claims 1 to 20.[5]

CONCLUSION

To summarize, the decision of the examiner to reject claims 1 to 20 under 35 U.S.C. § 103 is reversed.

REVERSED

IRWIN CHARLES COHEN Administrative Patent Judge	)
JEFFREY V. NASE Administrative Patent Judge	) BOARD OF PATENT) APPEALS) AND) INTERFERENCES
JENNIFER D. BAHR	)

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